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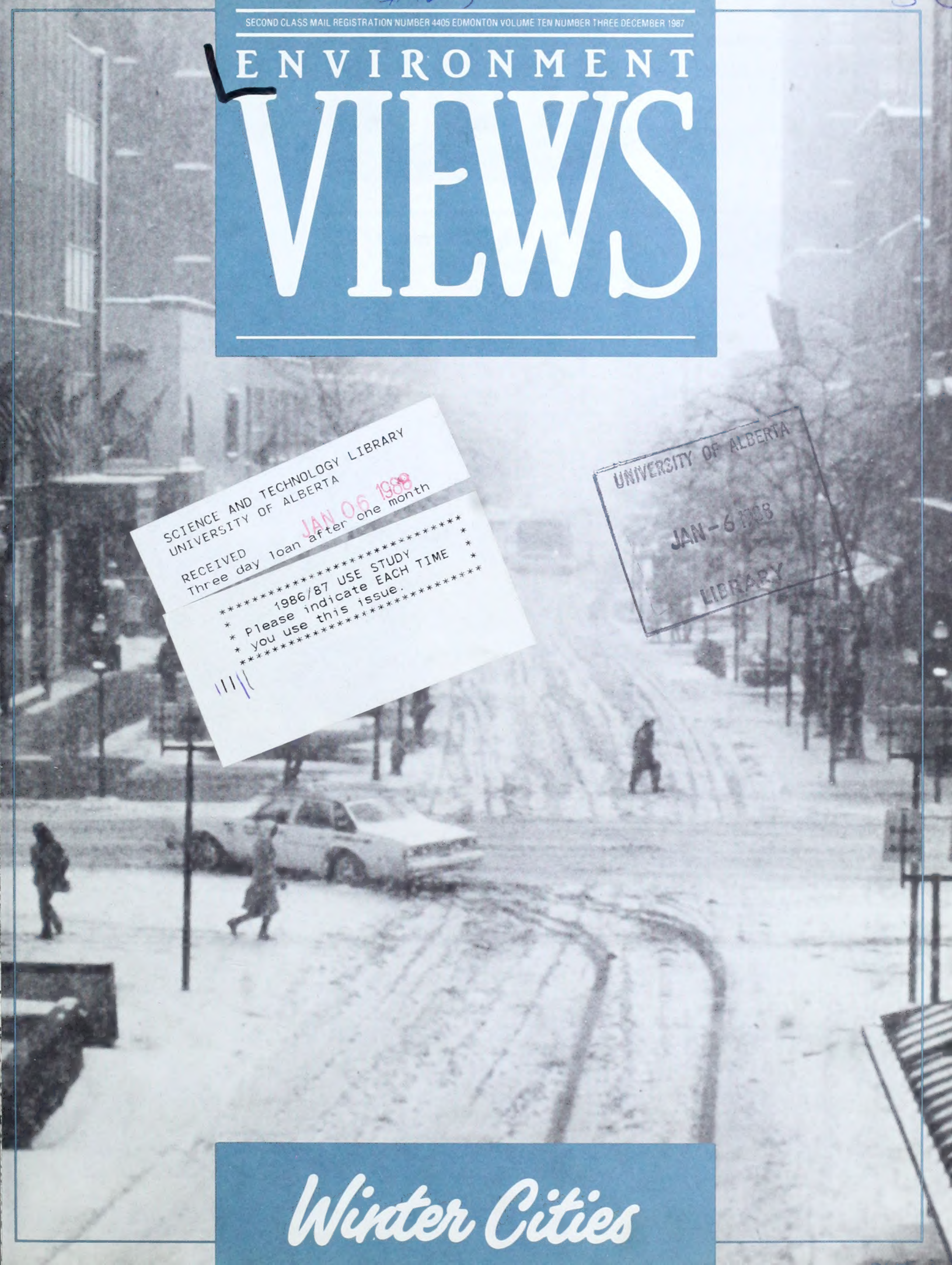
ENVIRONMENT VIEWS



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Winter Cities

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GOVERNMENT OF ALBERTA

GOVERNMENT OF ALBERTA

Environment Views is published quarterly by Alberta Environment. Each issue deals with a specific topic from various viewpoints with the aim of increasing awareness of environmental issues among Albertans. *Environment Views* is directed by an independent board with representation from environmental groups, government and industry. The views expressed by the publication are not necessarily those of Alberta Environment.

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The Editorial Board was helped in preparing this issue by Arni Fullerton, chairman of the International Winter Cities Committee and president of Forum '88; Rick Curtis, director of the Planning Secretariat, and by Bill Casey, head of Regional Recreation Services, both of Alberta Recreation and Parks.

Alberta
ENVIRONMENT

EDITOR'S NOTEBOOK

When my B.C. family and friends learned I was going to live in Edmonton, the reaction ranged from sympathy to an attitude I can only describe as mean-spirited. Lots of remarks about frozen wastelands, taking my red woolies, etc. At first, I secretly agreed with them. In fact, it came as a shock to discover that I quite liked the clear blue skies we get here (most of the time), the outdoor skating rinks all over the place, the valley full of ski trails. When I step into my skis at the back door and ski all afternoon, it's hard to feel wistful about the rain forest. And Christmas seems like Christmas here. There'a a halo of ice fog around the Christmas lights and the evergreens look spectacular after a fresh snowfall.

I won't be too much of a Pollyanna about this. Of course I hate scraping the frost off the windshield and wiping runny noses and trying to find mittens that match. By the middle of February I am gazing wistfully at posters for beaches I can't afford. But we northerners cope, somehow. This special issue on winter cities is full of stories about how we manage, despite some impressive obstacles.

For the most part, our cities, buildings and even our clothes are designed for other latitudes, other climates. Susan Hickman looks at some of the problems and some of the solutions to cities that are too spread out and to buildings that just don't work in the winter. Some of the solutions amount to a radical rethinking of urban design for winter cities. Sharon Adams talked to a lot of people with ideas that were on a smaller scale. No domed cities or futuristic building plans, just some small steps that communities and individuals can take to help make winter more livable.

Many of these solutions involve making people feel better about winter. Winter is often a time for low spirits as people feel cooped up and isolated. It's dark when you get up in the morning and dark when you get home. But the winter blahs are not inevitable, Gail Helgason writes. People who get out in the fresh air and do things don't seem to suffer as much as those who huddle inside avoiding the issue. She says recreation planners are beginning to think winter, providing facilities and programs for outdoor fun in the winter, instead of concentrating on our brief summer season, when people are far less in need of diversions.

Look to page 12 for a partial listing of events throughout the province. Then layer on some woolies and miracle fibres and enjoy.

Our promotion campaign continues. If your organization would like to have sample copies, or a display at a conference or convention, or if you know someone who would like to receive Enironment Views, please contact us at Environment Communications. Subscriptions are free.

The editor of Environment Views, *Maryhelen Vicars is a freelance writer and editor based in Edmonton.*

LETTERS TO THE EDITOR

DEAR EDITOR:

The recent issue of *Environment Views* regarding "Careers in the Evnrionment" was both timely and interesting. Unfortunately, it was also misleading and inaccurate in places.

The Environmental Science Program at Lethbridge Community College is recognized as the finest program of its kind in Western Canada. The ranks of Parks Canada, Alberta Provincial Parks, Alberta Fish and Wildlife Division, and similar agencies in the other western provinces are filled with our graduates.

You not only failed to mention Lethbridge Community College, the oldest public two-year college in Canada, but on page 26 you seem to confuse this institution with the University of Lethbridge (a bit like confusing Mount Royal College with the University of Calgary).

Edmonton may be the capital city and an important centre of industry, education, and arts; however, it is not the centre of the universe and important things are happening elsewhere in Alberta. Why not have a look around?

Yours truly,
E.B. Cunningham
Chairman
Environmental Science
Department

DEAR EDITOR:

I feel obliged to respond to the article on Marketing Alberta's Wilderness by Sharon Adams appearing on *Environment Views* No. 9 No. 3 September 1986 issue. It was very exciting to me. I am a Tanzanian in Tanzania but when I read the article I felt like the author was talking about tourism in Tanzania.

The marketing of these natural values to tourists at the same time preserving and protecting them for future generations is a real challenge to our government and tourist industry in particular. The writer clearly points out and I totally agree with him that "Environmental policy and tourism policy can't be viewed separately from the total set of social and economic policies." They are part and parcel of the latter.

Tanzania has an abundance of natural attractions to tourists both local and foreign. The famous Ngorongoro Crater — one of the seven wonders of the world — and the snow-capped mountain Kilimanjaro are examples. The problem is how we can continue to attract tourists to these centres of national attraction and therefore create profits without jeopardizing the very existance of these attractions. Poaching, deforestation, excessive and dangerous fishing (e.g. by use of dynamite) are a threat to the tourist industry and ecological system.

High credit to *Environment Views.* I am delighted!

Mfangavo E.S.
Senior Tutor
Cooperative College,
MOSHI — Tanzania.

DEAR EDITOR:

Seeing your list of past issues outlined in your letter accompanying this card reminded me of my intention to write to you regarding your issue on wilderness. I've taken *Environment Views* since its inception, and used it extensively while I taught high school biology. I'm a great admirer of your efforts — except for the issue on wilderness.

Environment Views frequently uses the AWA as a reference and source of information on various environmental issues. That is, except on the one issue with which we have the greatest familiarity — wilderness! I am not upset that AWA members were not interviewed on this topic, but I was very disappointed that you did not so much as consult us on what are the major issues involved in gaining wilderness protection in Alberta. As a result, the major issues as we see them — why Alberta doesn't have a system of wilderness areas, and why AWA's proposals for Wildland Recreation Areas have languished for 20 years — were ignored in your Wilderness Experience copy. There was no discussion at all of the legislation involved, and of why no public interest groups have proposed new wilderness areas under the existing legislation.

We consider this was a major omission from Vol. 9, No. 3, 1986. The AWA has devoted 20 years of hard volunteer effort to seeing a wilderness or wildlands system established in Alberta. Essentially none of the real problems involved in gaining official wilderness designations were brought out in your Wilderness Experience issue, and I feel you did your readers a disservice by not delving into them. A simple phone call to us when you were preparing this issue would have alerted you to the most basic wilderness-related issues, and would have made for a much more informative publication.

I know the constraints under which you must operate — limited space, budget, etc. But I feel even a table of statistics compiled from the AWA's 1985 "Status of Wilderness Report" would have focused for your readers, the official state of wilderness in Alberta.

Please keep up the otherwise good efforts. Even though it is obvious from this letter that we were very disappointed that you didn't consult us about this particular publication, and missed the crux of the wilderness issue in Alberta, we are still most supportive of your magazine.

Sincerely,
Vivian Pharis
President

Eric Bailey

Winter Around the World

Where the snow falls and the icy winds blow

We're Canadians, right? Survivors of the true north strong and free. We don't need meteorologists and climatologists to tell us what winter is. And surely, we all know when it starts. Here are 10 rules of thumb:

- When it gets light after you're at work and it gets dark before you go home;
- When you have to start scraping off your windshield;
- When the city air starts to smell clean and city nights get quiet;
- When snow tires are suddenly full price again;
- When the Christmas lights are up;
- When you see the first snow angel;
- When the ice is thick enough for skating;
- When you can unplug the deepfreeze on the back porch;
- When you start looking forward to turkey again after Thanksgiving;
- When the snow shovel finally comes up from the basement and goes out on the deck.

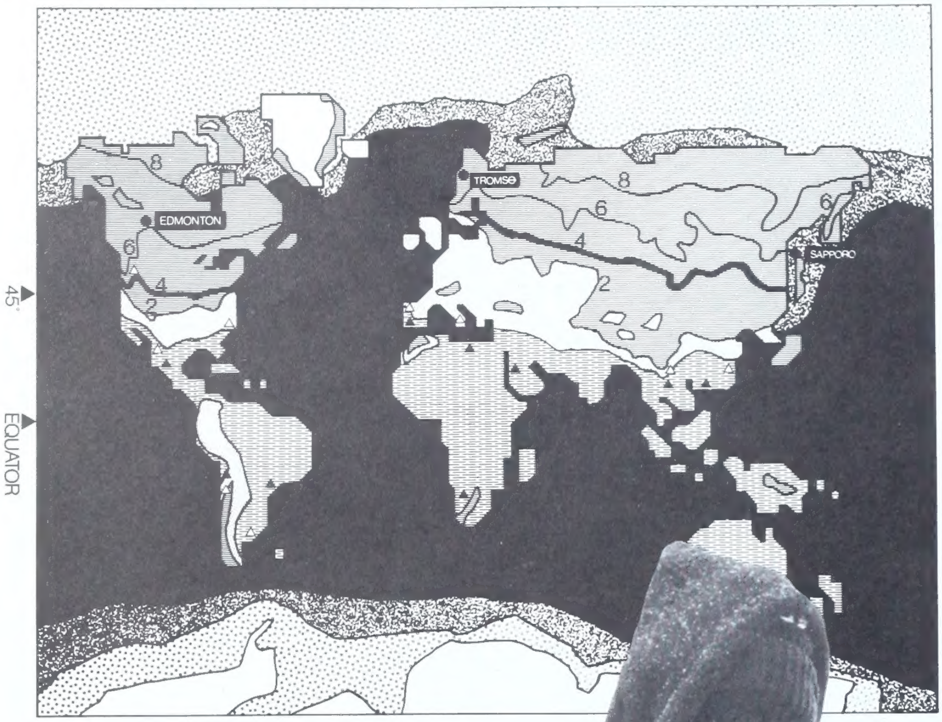
As it turns out, your snow shovel makes a pretty good winter yardstick. Nearly everyone in Alberta spends a lot of time pushing around snow each winter or waiting while someone else does. But according to Jack Royle, founder of the Canadian Livable Winter Cities Association, "Of the world's five billion people, four billion never see snow. They envy us."

What's to envy? Those four billion people don't know what it's like to live in the cold and the snow. Don't they know that only children love winter and the only intelligent adult response to it is to hide, rodent-like, in burrows and tunnels for the duration? Our aversion to a climatic condition that dominates more than half our lives even shows up on our maps. Three times as many Canadian place names invoke summer as mention winter. Summersides, Summerlands, Summer-

RON TATASCIORE

There's something special about skating outdoors that an indoor rink can't match.

World distribution of snow cover.


EDMONTON
TROMSØ
SAPPORO
45°
EQUATOR
8
6
4
2
Permanent cover of snow and ice
Snow cover on permanent sea ice
Duration of snow cover (months)
Limits of regular snowfall near sea level
Snow cover on temporary sea ice
A snow cover forms almost every year but is not stable
No snow cover
Limits of exceptional snowfall near sea level
A stable snow cover of varying duration forms every year

villes abound but the winter list is sparse. One solemn entry is simply Winter, Sask. A more joyous note is struck by Winter Tickle, Newfoundland. Meanwhile, down in Florida, we find the Winter Havens and Winter Parks, where we also find many winter-fearing Canadians.

For, indeed, we live in a country more cold than warm. The average frost season (the period between the first and last frost of winter) ranges from a low of 135 days on the west coast to a high of over 335 days in the north. The average frost season in Alberta ranges from just under 225 days to over 295 days in the Rockies. At Edmonton, the record is August 29, 1886 to June 25, 1887: 301 days. While most of Alberta is getting its first killing frost (September 24, on average for Edmonton) our European tradition insists that a glorious three-month fall is just beginning. Similarly, astronomical spring begins March 22, even though the snow and ice linger until late April.

In his monograph, "Understanding Winter Climate", David W. Phillips, a climatologist with Environment Canada in Downsview, Ontario, presents eight ways to describe winter. With the averages for Edmonton, these are:

Astrononomical	*89 days, Dec 22 to Mar 21*
Climatological	*91 days, Dec 1 to Feb 28*
Freeze-over period (ice)	*153 days, Nov 16 to Apr 18*
Frost period	*225 days, Sep 24 to May 6*
Snow season (recreational winter)	*170 days, Oct 27 to Apr 14*
Coldest 91-day period	*91 days, Dec 2 to Mar 2*
When maximum temperature is below freezing	*122 days, Nov 16 to Mar 17*
Windchill reading of 1200	*95 days, Nov 20 to Mar 4*

"For most Canadians, the abundance, duration and severity of winter's unpleasantness may be justifiably used as the criteria for answering what winter is," Phillips says.

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He outlines a winter severity index that takes into account discomforts: windchill, length of winter and mean daily temperature of the coldest month; psychological factors: darkness and wet days; hazards: strong winds, blowing snow and snowfall; and, finally, immobility factors: freezing precipitation and snowfall again.

He said the highest index in Canada is found over the northern Queen Elizabeth Islands, the Beaufort Sea coast and the Hudson's Bay coast near Churchill. The lowest values occur between Victoria and Vancouver with other low values reported in the southern interior of British Columbia and the extreme southwestern portion of Ontario. High values in more heavily settled places come from the Yukon, Saskatchewan, Manitoba, northern Ontario, most of Quebec and Newfoundland. Alberta and the rest of Canada fall in between. On the 100-point scale, Calgary rated 44 and Edmonton 49, while Victoria and Vancouver got 8 and 10 respectively and Saskatoon, Regina and Winnipeg racked up nastier scores of 57, 61 and 62.

Actually, Winnipeg turns in the worst winter severity report card of the 24 largest cities in Canada. Winnipeg holds the record for the lowest average January temperature (-19.3°C) for a Canadian city over 100,000 in population.

For kids, winter begins when the tobogganing gets good.

GOVERNMENT OF ALBERTA

Phillips doesn't think an index of severity tells the whole story of the misery of winter in which, he said, "Canadians are resigned to a five-month indoor living ordeal." To get a sharper picture of how we experience winter, he looked at what he calls "misery days" — days of crippling storms, blasting winds or head-numbing cold.

A misery day has a single-day snowfall accumulation of 10 centimetres or more, or at least four hours of blowing snow of certain severity, or two or more reports of freezing precipitation of a certain severity, or one report of a windchill factor in which exposed areas of flesh freeze in less than two minutes.

From 1975 to 1984, Edmonton Municipal Airport recorded an average of 11 misery days per year. At Edmonton International Airport, the average was 17. The annual number of misery days at these locations ranged from 4 to 35. Winnipeg International Airport, however, nearly tripled Edmonton Municipal's score, posting an impressive 32 average and 44 maximum (that's a month and a half of misery days in one winter), taking the game away from Edmonton in windchill and blowing snow.

Winnipeg is a world contender in this event, though. In a list of 70 winter cities prepared by the Livable Winter Cities Association, Winnipeg was only beaten in their -18°C average January temperature by Fairbanks, U.S.A. (-24°C), Thule, Greenland (-24°C), Tihua, China (-19°C), Tomsk, Russia (-21°C), and, of course, the leader, Ulaan Baatary, Mongolia (-26°C).

Which also proves that we're not alone in our annual plunge into the deepfreeze.

The winter cities movement has defined a winter city as a place where the average January temperature is 0°C or colder. That takes in all of Canada except southwestern B.C., and most of the northern United States. Other countries around the world qualifying for membership in the winter cities club include Yugoslavia, West Germany, Denmark, Greenland, Sweden, China, Afghanistan, Finland, Russia, Norway and Mongolia.

We haven't always had snow and cold in the winter, though. The dinosaurs that migrated from breeding grounds in southern Alberta to feeding grounds in the Mackenzie Delta 70 million years ago weren't driven south each fall by cold and snow —there wasn't any. Palaeontologists suggest that the waning hours of sunlight caused plants to stop growing in winter, limiting the food supply, even though temperatures may not have cooled significantly. A snowy winter has only been a fact of life in Canada for the last three million years. The previous ice age was probably about 250 million years ago. Ice and snow may have only been present on and off for about five per cent of the earth's history.

However recent a phenomenon it is, we can certainly look upon winter in Alberta as an adventure in weather on a world scale. Out on the boring ocean coasts, extremes of temperature are moderated by those huge bodies of water, but Alberta has winters with daring and flair.

It can get so cold in High Level that when you pull your car away in the morning, you have to drive 20 km to round out the flat spots on the tires. It can get so warm in Lethbridge that the trees start budding in the dead of winter. These extremes result from a continuous battle between two air masses: the frigid Arctic and the mild Pacific. With varying intensities, mild air from the Pacific frequently vaults over the mountains and slides down the eastern slopes of the Rockies to deliver warm, dry chinooks from Grande Prairie to Waterton Park. The Arctic air mass resists the Pacific front, and the characteristic arched boundary between them wavers back and forth across the province from southwest to northeast and back again.

The result of this winter battle is temperatures which vary widely across the province at any given time and which fluctuate madly at a given place over a very short period of time. Says Will Prusak, climatologist with Environment Canada in Edmonton, "It can be darned cold when you go to bed but when you wake up the snow's melting and water's starting to run outside. And we can lose those nice balmy temperatures just as quickly."

In January, 1987, the extreme daily minimum that month was -35°C in High Level. As for variation in the same place, last February, Lethbridge posted a high of 17.5°C and a low of -25°C. This forty degree differential in one month is attributable to chinooks, Alberta's Winter Tickle.

Snowfall varies just as dramatically. The average total snowfall in Waterton Park for a season is 542.8 centimetres while in Edmonton it amounts to less than a quarter of that: 135.7 centimetres. Alberta also holds the Canadian record for the greatest one-day snowfall: in 1963 at Livingstone Ranger Station, 111.8 centimetres fell — an amount staggering not just because it would come up to your navel but because it happened on June 29.

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Environment Canada's Prusak says averages for winter weather in Alberta often have little meaning. "When you find yourself close to the 30-year average for temperature it's usually because it's in the process of changing, just passing through on its way to the other extreme."

For Prusak, though, winter really begins when he has to start shovelling the snow on the sidewalk and it ends when he can put the shovel away. For most of Canada, Alberta included, the shovel index may be the surest measure of winter we have.

Eric Bailey is a freelance writer specializing in outdoor and interpretive writing, working from Alder Flats.

Livable Winter Cities movement

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"Northern regions must communicate more regularly and fully with one another if they are to prosper and make progress," said Jack Royle to the Winter Cities '86 Forum in Edmonton. A good sign that communication is becoming more regular is that Edmonton will play host to the Winter Cities Forum '88 in February.

The event will bring business and civic leaders together for seminars and workshops on economic opportunities in clothing, recreation, urban infrastructure and buildings, transportation and leadership. At the same time, the third Winter Cities Conference of Founding Mayors will take place. The first was held in Sapporo, Japan in 1982 and the second in Shenyang, China in 1985. A trade show will round out the program.

The growth of the winter cities movement in Canada stems from a 1979 conference in Minneapolis where Royle spoke about a Canadian perspective on Winter Cities. "I knew very well what it was like to walk down Portage Avenue in winter and I used to ask the architects, 'Are people in Winnipeg going to have to suffer like this in perpetuity?'"

Royle, now credited as the Canadian founder of the movement, began to spread the word in Canada, forming the Livable Winter Cities Association, which met for the first time five years ago.

The association now has over 500 members committed to improving the quality of life in cities where the average January temperature is below freezing. It puts on conferences, panels and workshops, has published or helped publish several books and publishes a newsletter which Royle edits from his home in Toronto.

Members of the Edmonton chapter are helping to organize Forum '88 and sponsor other projects in the city including the Christmas lighting extension program called Northern Lights.

An architectural report published by the association says, "The winter city will not be created by a focus on space age bubbles, heated sidewalks, malls that suck the life of the city into their corridors or right-to-sun ordinances...The hardest shift will be attitudinal: to see the city in its winter state, to ask each time a decision is made how things will fare during the months of cold and darkness...The barrier is the persistence of a summer state of mind. Winter cities need to be creative about winter, not simply tolerant."

Royle puts it more simply: "Grooming ski trails is more important than planting flower beds."

In a city with a four-month growing season, that makes sense.

— *Eric Bailey*

Gail Helgason

Coping with Winter

Winter is a state of mind — to a degree

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Driving home in the dark at 5 p.m. one winter day, California native Eleanor Wrigley heard a psychiatrist on the radio discussing how he treated depressed patients with light.

"It was an 'Aha' moment," says Wrigley, a biologist who had experienced severe early winter depression since her move to Edmonton two years earlier.

"I went home and put my bedside light on a timer and set it to go on at 5 a.m. I haven't had early-winter depression since."

The program co-ordinator for Edmonton's Capital City Park exults in the simple way she found to fight winter depression. She is one of a growing number of Canadians who is convinced that ways can be found to "warm" our psyches to winter.

> "It should be clear ... that we need to encourage the positive behavior in winter; we need to emphasize the cheer. Little things can help a lot. In Finland, at the beginning of the season, people fashion pine boughs into everlasting green doormats."
> William Rogers,
>
> *The Winter City Book*

Electric timers might seem an odd way to treat something as complicated as a mental state. But when it comes to enjoying winter, experts say that tiny adaptations can yield big dividends.

Psychologists affirm the powerful capacity of winter to cause depression. Whatever you call it — cabin fever, the winter blahs — the five long, dark, cold months take a toll on almost everyone's *joie de vivre.*

The effect of winter on the mood of the average Canadian is "actually quite substantial," states Dr. Michael Persinger, professor of psychology in the Neuroscience Laboratory of Laurentian University in Sudbury, Ont.

He says about 30 per cent of the mood

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variance which normal people experience in winter can be attributed to the season. The effect of winter among some groups in society — the elderly, the emotionally unstable or chronically depressed — is even more pronounced.

These mood changes may result in increased irritability, aggression, altered behavior such as drunkenness, and even thoughts of suicide (rarely carried out).

Dr. Persinger differentiates between the short-term effect of weather changes, which last two or three days, and the seasonal or long-term effect of winter, which is cyclical and more insidious.

"The average person usually shows a substantial decrease in mood starting in the first weeks in January. This will continue usually until the middle of February, when it really bottoms out. By April, you're looking at normal summer values."

Two major factors are at the root of winter discontent, he says — and both can be alleviated. The first is a decrease in the amount of light, which can be compensated for by increased overhead light. The second is simply boredom, caused by the drabness of the winter landscape, reduced mobility and social contact.

Both recreational planners and psychologists say that more enjoyable winters start with a positive attitude.

"If people expect to be miserable in winter, they don't get involved," says Dr. Bob Dewar, professor of psychology at the University of Calgary. "If you do, it makes life more tolerable."

In fact, psychologists say a four-season city can reduce family stress, because it allows families periods of togetherness, followed by more separation in summer. It also results in feelings of camaraderie among people who do brave the elements.

Social scientists also agree that more opportunity exists to get out and enjoy winter than ever before.

"Since the early '70s our attitudes towards winter have been shifting quite dramatically," says Dr. Tim Burton, chairman of the Department of Recreation and Leisure Studies at the University of Alberta.

"There's been a steady and very perceptible rise in participation in winter activities. Cross-country skiing is the obvious example."

Technology has played a large part in helping Canadians to make friends with winter. Surveys show that the biggest obstacles to winter recreation in Alberta are lack of special skills and equipment. But recent innovations in no-wax skis, for example, have made that sport far more accessible to the average person.

"Last winter I finally gave up my old wood skis," admits Dr. Burton. "Now I can be out on the river valley trails within 10 minutes of getting home."

Less bulky winter clothing has also made it easier to face the elements without a lot of fuss.

Equally important, new trends in recreational programming are increasingly appealing to sectors of the population which traditionally spent the winter nestled close to the hearth.

Some believe the trend in the last decade to community-level winter festivals is of even deeper significance than the upsurge in winter outdoor recreation.

Bill Casey, head of Regional Recreation Services with the Recreational Development Division of Alberta Recreation and Parks, says winter festivals today allow families, extended families and neighbors to go out and enjoy themselves in an atmosphere not unlike "the old community social."

The County of Leduc celebrates winter with events such as stilt races in the snow. Snow golf is the focus for a successful, family-oriented winter event in Prince George, B.C.

These events cater to "a segment of the population which just wants to go out and have a good time outdoors without being involved in a competitive, skill-testing situation."

Burton says that until 10 or 15 years ago, winter recreation tended to be confined to children, who have always enjoyed it. Now there's a growing swell of participation by people between 30 to 50 years of age.

Senior hockey, for example, has become very popular in the last few years. The rules do not allow bodychecking and are designed to reduce the threat of injury —

RON TATASCIORE

recognizing that most of the players are expected to be at their jobs the next day.

Another recent development in winter recreational programming recognizes the difficulties which people from different parts of the world have in adjusting to Alberta temperatures. After all, two of the six coldest metropolises in the world — Winnipeg, Ottawa, Calgary, Edmonton, Moscow and Montreal — are in Alberta.

Last winter, Wrigley co-ordinated a special program with Edmonton Immigrant Services to acquaint newcomers to the enjoyable aspects of a cold climate. Participants were introduced to skating, skiing and snowshoeing, and given basic tips on winter dress.

"Some of the women were just like children, skating around Rundle Park with a chair to keep them upright. It was wonderful."

Wrigley realized the need for such a program at a seminar where a South American woman described how she throught she would not live through her first Edmonton winter.

"They don't know how to dress for it, they don't know how to deal with it. And they are not intrigued by winter, because in their culture there are no winter myths. They don't have the equivalent of our Santa Claus or jolly snowman."

Social scientists say that indoor leisure centres are also a welcome arrival on the winter scene, because they allow individuals to pursue the same kind of recreational activities year-round.

West Edmonton Mall is the most elaborate example of a combined indoor leisure and shopping mall, but both Calgary and Edmonton have several malls which would also qualify as leisure centres.

"They are places where people go to sit and watch the world go by, in the old European tradition," says Dr. Burton. "I do it myself."

He says these centres are important because they have added new options for winter enjoyment. No longer is there only a choice between bundling up to go outside, or staying at home.

Another often-overlooked benefit of winter is that the season seems to encourage personal development. Edmonton, for example, has one of the highest rates of attendance in adult education classes in the country.

"In winter we lead a more inward life," wrote Henry Thoreau. "Our hearts are warm and cheery, like cottages under drifts, whose windows and doors are half-concealed, but from whose chimneys the smoke cheerfully ascends."

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Winter is a good time for getting people together, whether for a family skate or a night class. Art classes at the U of A (above) are well attended.

Recreational planners and psychologists credit the Livable Winter Cities movement with spearheading many of the changes which are thawing out attitudes to winter.

Thanks in part to that initiative, people are beginning to get over the "perceptual problem" of thinking of winter weather in terms of extremes, says Dr. Burton, In fact, the average daily temperature of Edmonton in the month of January is minus 14°C — not really that cold.

Design changes within cities also have a notable effect on recreation opportunities and mindset, notes Dewar.

Calgary's system of second-floor walkways, for example, is one of the largest in the world. It allows downtown workers to walk in relative comfort during their lunch break, seeing more colors and sights.

"All these things are adding to our comfort levels and reducing the irritants associated with winter."

Despite these strides, much more remains to be done to make winter truly enjoyable.

William Rogers of Minneapolis, one of the founders of the Winter Cities movement, says urban planners must become more sensitive to the way humans respond to the winter environment. Color, soft lighting and conifers can do much to relieve the winter landscape — and the winter mindset.

"I'd like to see lilac-colored buildings

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LYON MOUNTAIN RESORT

in winter cities instead of cold steel blue and glacial white. Instead, we need red, lilac and rose."

The traditional vocabulary of weather forecasting should also be more positive, he says.

"Have you ever heard a forecaster say 'A lovely snowfall is coming?' It's always treated like a catastrophe."

A winter holiday would also help.

"The only significant stretch during the calendar year when we do not have a long weekend holiday is between Jan. 1 to the end of March," says Burton. "I find that odd."

At the individual level, social scientists suggest that Canadians could enjoy winter more by taking better advantage of technological strides.

Much more emphasis on interior lighting is at the top of the list. Other sound investments in improving our home environment — and hence our winter state of mind — include humidifiers, snowblowers and electronic air cleaners.

To relieve boredom, Persinger highly recommends a technique called "variable interval scheduling". This involves assigning one member of the household, at the outset of winter, to go to the calendar and randomly determine some kind of novelty for various times during the winter months.

"Under no circumstances, when it comes, should family members decide they are too tired to take part," he says.

"Variable interval scheduling tends to relieve boredom quite substantially. The problem is to get it started. Once you get started, it tends to keep going."

Dr. Dewar sums up the collective wisdom of psychologists in a nutshell: "It sounds corny, but my advice is to get out and make the most of winter. It's here, it's part of living in Alberta.

"Don't just tolerate it, enjoy it."

Gail Helgason is an Edmonton-based freelance writer, editor and media consultant.

Get your boots on

All the experts say the key to good mental health in the winter is to get out and enjoy it instead of huddling indoors waiting for spring. Here's a little sampler of activities around the province this winter to get you going.

DEC. 17-JAN. 3 PROVINCE-WIDE

88th Annual Christmas Bird Count Bird counts are done in different 24-hour intervals during the count period. Contact your local conservation or nature group or the John Janzen Nature Centre in Edmonton 434-7456.

DEC. 18-20 FORT MCMURRAY

Fort McMurray Winter Festival and Playdowns Throughout the city.

DEC. 26-27 PROVINCE-WIDE

National Bird-Watching Weekend Contact local nature or conservation groups for events in your area.

JAN. 1 EDMONTON

Snowfest Family snow sculpture event. John Janzen Nature Centre.

JAN. 9 RED DEER

Winter Walk Snowshoes provided. Kerry Wood Nature Centre.

JAN. 10 EDMONTON

Goldbar Park Winterlude: dogsleds, cross-country skiing, snowshoeing, picnicking.

JAN. 13-FEB. 28 CALGARY

Calgary Winter Festival As a warmup to the Olympics and during the Games, special events will be held throughout the city, including a Winter Fantasy at Prince's Island (Jack Frost brunches, family skating, children's snow playground, snow and ice sculpture competitions). Other events include outdoor street festivals and community association festivals. On **Feb. 13**, there will be a citizens' party at Olympic Plaza.

JAN. 22-24 CASTOR

Castor Winterfest: activities at various locations.

JAN. 28-31 BANFF

Banff-Lake Louise Winter Festival

JAN. 28-31 RED DEER

Alberta Winter Games, Canyon Ski Area. Events: bobsled, luge, nordic jumping, alpine skiing, freestyle skiing, special Olympics and physically disabled alpine skiing.

JAN. 30 EDMONTON

Canadian Birkebeiner. Patterned after the traditional Norwegian ski race. Racers follow a 55-kilometre course from Devon golf course to Fort Edmonton Park, or a 20-kilometre course from Windermere Golf Club. Further information: River Valley Outdoor Centre, 428-3033.

JAN. 30-31 ROCKY MOUNTAIN HOUSE

Crimson Lake Lions Winterfest At Crimson Lake Provincial Park. Dogsled teams from Alaska and the Yukon.

FEB. 5-MARCH 5 EDMONTON

Labatt's Lite Lantern Festival. Adjacent to West Edmonton Mall. In conjunction with Winter Cities Showcase '88. Ice carvers from Harbin, China will shape ice figures, buildings and sculptures. Singers, dancers and acrobats will entertain amidst the sculptures.

FEB. 12-21 EDMONTON

Snowflake Fantasy Also in conjunction with Winter Cities Showcase '88. Opening ceremonies and fireworks **Feb. 12-21.** Events **Feb. 13-14** in Hawreluk Park include sled dog races and rides, snow sculptures, cross-country competition, sample triathalons and hot air balloon rides. Events move downtown **Feb. 20-21** for ice sculptures in Winston Churchill Square, a Polar Promenade, indoor displays and entertainment in walkways, LRT stations, and lobbies.

Susan Hickman

The Livable Winter Cities Movement

Northern Solutions

Most cities and building are designed for southern conditions.

EDMONTON ECONOMIC DEVELOPMENT AUTHORITY

Sixteenth-century poet John Donne called winter "the lost season." T.S. Eliot believed it was "the worst time of the year," and to Shakespeare, winter was an enemy best left to the telling of sad tales.

As the howling wind whirls around us here in 20th century Canada, we are snug and cozy by our roaring fireplaces, well prepared for the dark and cold season.

Well, there is a bit of a draft coming through the north-facing windows in the front room reminding us our storm windows are a poor fit. Yes, and, sigh, the snow shovel awaits us in the porch, beckoning us to remove last evening's drift of snow across the front walk.

But it's only a brief jaunt to the transit shelter on the corner and hopefully the buses are running on schedule because more often than not a bitter wind blows through that open doorway, depositing eddies of flakes around our fidgeting feet.

Yes, we will stumble through the drudgery of winter, hurrying from warm space to warm space and wait for that optimistic weather report which will tell us spring is finally on its way.

It doesn't have to be this way, say architects who work with, rather than against, winter, creating sensible designs rather than relying on exports from southern climes or old technologies which are ineffective for the north.

Arni Fullerton, Edmonton architect and urban designer and chairman of the International Winter Cities Committee, exercised his creativity in dealing with northern climates when he led a team of consultants from four countries to design a domed city north of Fort McMurray.

He concluded that the transparent membrane, which would have enclosed an area five times the size of an indoor stadium and created a climate like that of North Carolina, was not only sensible but financially feasible. Maintenance and construction costs would have been greatly diminished with no need to insulate against the chill of winter or to bury pipes below the frost level. The 1981 project was scratched when oil prices plummeted, but Fullerton suspects the domed community will be built "somewhere" within the next decade.

There are other examples of innovative design, such as the small mining town of Fermont, Quebec, designed by Ralph Erskine. A 1.2-kilometre long windscreen building is curved around a courtyard, sheltering everything behind it. The main street is entirely enclosed and free of automobiles.

But the ultimate objective must be encouraging people to go outside and "celebrate the winter," says Fullerton. Coniferous trees, trees with berries and cones to attract birds and squirrels, red brick buildings and colorful sidewalks, bright lights on streets, bridges, trees and windows — all those things that make winter more esthetically pleasing — should be considered in designing our cities. "That whole idea of expressing yourself in winter, humanizing snow, making it fun and delightful, takes the drabness out of the winter landscape."

Calgary architect Harold Hanen agrees that the most important aspect of winter is the pedestrian. Hanen is chairman of the Winter City Research Group at the University of Calgary's School of Environmental Design, which is studying winter city issues and hopes to publish its findings by the end of this year. He says, "The pedestrian is the most vulnerable and the most affected by winter living."

According to Hanen, designers in winter cities "have tended to neglect those without automobiles. We have failed to concern ourselves with that question of accessibility." Hanen's ideal winter city would be "much more human," with interconnecting laneways and protected walkways for safe and comfortable winter walking.

> *"If we could only turn the city grid roughly 45 degrees, then we would have a much better orientation for solar radiation and protection from winds."*

This concept is reflected in Hanen's best-known project, the Plus 15 system of Calgary, nine kilometres of skyways built four and a half metres or higher above the ground, linking downtown buildings in an environmentally-controlled atmosphere.

The ideal winter city would alleviate the sense of alienation many people experience during our coldest season, suggests Hanen. The lastest colors — "aluminum finishes or pastel blues" — selected by southern designers would be replaced by warmer hues, rust-colored brick and gold stone as used by the Scandinavians.

Shoppers prefer shelter in winter conditions.

General city forms would be much more compact. "We would probably begin looking at the activities and the relationships of the actual users in a much more intimate fashion. We would make more spaces for communal living, recreation, places for bonfires, protective slopes for sliding."

Climatically unresponsive to the changing seasons, planners and city designers in every department seem to think of their situation separately, says Hanen. "In an ideal winter city, there would be much more integration, with the ultimate focus on the citizen."

Hanen's winter research group is part of a growing awareness of the importance of winter. Sapporo, Japan, was the first to delve into cold weather research with the establishment of the Northern Region Centre, says Hanen, and a similar centre has been initiated in Harbin, China.

William Perks also question the traditional tendency to employ technology in mitigating the severity of winter. Dr. Perks is a professor of urbanism and planning at the University of Calgary.

Admitting to an abhorrence of artificial enclosed environments which only serve to "shut winter out," Dr. Perks, like Fullerton and Hanen believes more emphasis should be placed on making people more comfortable in moving around outdoors. "(For the sake of health), we need more contact with the natural environment."

Perks says overdesigning our street bases is part of the problem. "We are victim of excessive traffic engineering standards for streets and for the spaces between buildings. Winter cities would contemplate, in my view, a closer clustering of housing which would contribute to mitigating wind effects."

Sherbrooke and St. Catherine streets in Montreal are not wide streets and are easier to maneuver, says Perks. "People are out there all winter long. Streets like Jasper in Edmonton or Portage in Winnipeg are too wide, too uncomfortable and (fall prey to) the diminishing shelter effect.

"It is only our notion of efficiency to have bigger streets, get the snow away and get the people into artificial environments. Municipalities respond much more emphatically to the efficiency and utility of developers than to considerations of urban form and design of environment."

Another problem is the original land subdivision, Perks notes. "Our cities have been subdivided on a grid which has a north-south axis. If we could only turn that grid roughly 45 degrees, then we would have a much better orientation for exploiting solar radiation and protection from winds."

Edmonton landscape architect Ronald Tatasciore is another advocate of making the most of outdoors in the winter. Taking into consideration the elderly or housebound who have genuine fears of winter, Tatasciore proposes employing such landscape tactics as buffer berming or tree planting to reduce snow deposition on highways, heating of sidewalks through electrical wires, waste heat systems or steam distribution to keep them free of snow and ice, retractable canopies and festive winter cafes.

"Shopping centres have their place and I think they are excellent," says Tatasciore, "but I don't think we can discount streetscapes in our small communities. We, as landscape architects, have to create the stage. We have to figure out how to make our cities more livable, how to transform winter for people who have a summer perspective."

Tatasciore, whose architectural firm won an award for its Whyte Avenue streetscape improvement program in Edmonton, suggests lighting is a major issue in creating a better ambience during the darker months. Artificial lights on winter-bare trees, as on Whyte, or floodlit branches and ice sculptures, sound and light shows, as at the Parliament buildings in Ottawa, dancing water fountains and bright colors to liven up the "blah blah blah whitescape of winter" are all on Tatasciore's list.

Overall, we do a pretty poor job with public transport in the winter.

A park designed with winter in mind would have man-made ponds for ice skating, a hill for toboganning, heated benches for changing skates, a fire ring, hot chocolate, lights and music — a happy, colorful place where people could gather and socialize. Parks like this do exist, of course, but we need more of them.

Calgary architect Tang Lee, an associate professor in the faculty of environmental design at the University of Calgary, believes our lack of innovation comes from following unrealistic fads based on southern-climate technology. "The typical Mexican or Californian-style house is designed appropriately for those climates. We see them and they look very nice and we say, 'We want one of those.' What we need is to develop a northern climate architectural style."

Lee's ideal northern home would be spherically-shaped or at least more compact in design. Windows would be minimal and south-facing, furnaces would be highly efficient and lighting more energy-conscious. Lee points to recent innovations in designing buildings for northern climates such as double or triple glazing for windows and greenhouses attached to the south side of a building to "capture the sun" and act as a buffer zone.

All our dreams of a beautiful winter city can be undermined by the reality of snowbound streets. Salted and sanded, polluted with car exhaust, layers of wintry precipitation accumulate discouragingly, making snow management an essential, if messy, business.

In their book, *The Winter City Book*, William Rogers and Jeanne Hanson say there is no way around the expense of urban snow removal. Futuristic methods of removing snow have been developed, including the mixing of verglimit, a Swiss invention, with road surfacing material during road construction to prevent slipperiness. In parts of Canada, reports Ruth Kirk in her book, *Snow*, antifreeze is circulated in pipes embedded in the pavement. Geothermal steam is sent through a similar gridwork of pipes in Klamath Falls, Oregon and in Reykjavik, Iceland.

One solution to bad weather is to make the indoors as appealing as possible. The water park at West Edmonton Mall is a big attraction at 40° below.

Meanwhile, a Calgary professor has written a report on busing and concludes that "overall, we do a pretty poor job" with public transport in the winter. Dr. John Morrall, professor of civil engineering at the University of Calgary and part of Hanen's Winter City Research Group, studied bus passenger walking distances and waiting times in summer and winter in the city of Calgary.

People who use public transport are at a great disadvantage, particularly in the winter climate. "We have a long way to go to improving things. Why not redesign public transport (to) come into the heart, right underneath a shopping centre." This has been done in some of the newer centres in Scandinavia and at Toronto's Eaton Centre as well as Montreal's downtown complex, "but typically, they are only found in the downtown areas and only in a couple of cities in Canada.

"What we have left completely out of the planning picture is the suburban area. Generally, Canadian cities were laid out for the convenience of the automobile during the two decades following the Second World War."

Northern climates also affect the design of water and sewage treatment systems and present operational and performance limitations, suggests David Spink, branch head of municipal engineering for Alberta Environment. Pipes have to be buried below frost level, maintenance is restricted to minor repair work while the ground is frozen, water treatment facilities must be overdesigned to accommodate slower chemical reaction rates in winter and lagoon systems have to be larger to improve the efficiency of sewage treatment processes during cold weather.

"We run into problems when we take water and sewage treatment systems off the shelf because they are developed where the climate is warmer and tend not to be geared to our critical winter periods," says Spink. "If we were more in tune, got more information from Sweden, Norway, the Soviet Union, maybe it would help. But water and sewage treatment is costly in northern climates and the bottom line is there is not much of an alternative."

Suncor has found some alternatives to problems discovered in the early stages of its operation in the tar sands near Fort McMurray. In the late '60s when the first layers of muskeg were being removed from the oil sands, Suncor found its equipment could not penetrate the ground during severely cold weather, recalls Ken Shipley, manager of communications and community affairs. "They had to blast the ground before they could dig it."

Diesel-electric loaders and trucks, Suncor discovered, were too expensive to operate in the cold climate. "Electrical wheel motors and breaker contacts give you more trouble in very cold weather. Out of a fleet of 26 trucks, they would only be able to keep six or seven running because of the electrical and mechanical problems." The company had to switch to mechanical vehicles and hydraulic 19-yard shovels.

Is there hope for a brighter winter in the future?

Canada is a young country and Dr. Perks intimates there has not yet been much of a tradition in taking a "visionary approach" to urban development. "Our cities are designed by a whole bunch of actors in the development industry."

More optimistically, architect Hanen hints at a growing recognition of our needs in the north. "It takes very little to make people aware, like taking some of the filters off the eye. Most people are responding very quickly. I am leery of grand solutions, the notion of domed cities. The main thing is a recognition of our place and time and responding to it with a hands-on notion, the kind of reality the early pioneers had."

Tatasciore says we just need "a chance." The rural values of Alberta, in particular, are resistant to urbanization to start with, he suggests. "So improvements to the urban winterscape are going to take awhile. It is going to be a very slow incremental learning process to upgrade our values and it will be the positive-thinking people who lead the way in making winter more livable."

"The only way it is going to be done is through vision."

Susan Hickman is an Edmonton freelance writer.

Maryhelen Vicars

Button Up
Your Overcoats

Some new and not-so-new approaches to cold weather clothing

ALEC PYTLOWANY

The newest skiwear is brilliantly colored and warm without being bulky or heavy.

You need a physics degree to shop for outerwear these days. It's enough to make someone who skis in wool knickers and a down jacket feel like a museum piece.

Nothing has really changed in winter clothing, of course. It's still a matter of keeping warmth in and the cold out. All the miracle fabrics and fabulous colors and three-figure price tags are just variations on the age-old strategy of trapping as much air as possible near the body, while protecting that trapped air from wind and water.

Susan Walkins, in speaking to the Winter Cities Forum '86, described some of the basics for creating and maintaining the vital quantity of still air that will keep us warm: as part of the fibre; as a product of garment design; and by keeping it dry and protected.

"Wool, a fibre known for its warmth, is naturally crimped and therefore contains pockets of relatively well-protected air. Down has hundreds of tiny, air-trapping extensions."

Synthetic, so-called miracle fibres may be designed to imitate wool by being crimped and twisted, or there may be a hollow core to the fibre itself which traps air.

When the fibres are woven and knitted, there is a further opportunity for incorporating air, she says. Fabrics which imitate fur (another good insulator, especially if worn fur-side-in or covered by a wind- and waterproof layer) trap more air between the strands.

The cut, construction and fit of garments makes a big difference in how cold we will be. A tight fit traps less air. In fact, Watkins told the delegates, "Thermographs of people wearing identical garments have shown that a tighter fit results in considerably more heat loss through a garment's insulation.

Talk to anyone interested in cold weather clothing, and the term **layering** will crop up a dozen times. It's the principle behind the Inuit parka, and the secret of comfort when being active outdoors in the winter.

A good cross-country ski outfit, for example, starts with underwear that insulates and draws perspiration away from the body, and pants that are windproof and may also provide insulation (tightly woven wools or insulated synthetics, for example). Two thin sweaters are better than one heavy one. The jacket should be windproof, but not heavy — an anorak, for example. Even gloves are often layered, with leather or other windproof material over knitted wool.

As well as trapping air between each layer, this approach provides flexibility. In the morning, everything is snugly zipped, collars and hoods are in place, and there is maximum protection. After an hour's skiing, the jacket and one of the sweaters, along with the outer gloves, may be stuffed in a fanny pack, ready to provide more protection when the skier stops moving.

"One of the most important aspects of keeping still air in insulation is not allowing it to be invaded by either moving air or moisture," Watkins said. The obvious solution is a waterproof layer on the outside. But anyone who has ever worn a slicker over a heavy sweater knows the problem: If you're active at all, there is nowhere for perspiration to go, and you get first a steam bath and then bone-chilling cold, as perspiration wets the insulation.

There are a number of high-tech approaches to this dilemma. Terry Hartlaub, of Mercury Sportswear in Edmonton, describes some of the newer fabrics that Mercury is using in its *blue skys* skiwear line.

A number of the new fabrics work on the principle of **micropores,** tiny holes in the fabric which allow it to breathe, but are not large enough to let rain or snow through to the dry insulation layer. Gore-tex is the most commonly used brand of a fabric which is made up of a microporous film coating the underside of a variety of fabrics.

The cut, construction and fit of garments makes a big difference in how cold we will be.

Hartlaub says the disadvantage of this is that the film will break down where it is creased or where it is subject to salt from perspiration or seawater.

"We're trying a fabric called Super Microft, a windproof, waterproof, breathable fabric. It is the same principle as Gore-tex but it is not a laminate: the micropores are created by the weave of the fibres themselves."

Another Gore-tex alternative is called Entrant, a microporous coating which is supposed to be more breathable when wet.

Hartlaub says her firm used to make a lot of down garments, but has almost completely replaced down insulation with a variety of synthetics, all of which are less bulky, cheaper and provide more insulation when wet than down does.

EDMONTON ECONOMIC DEVELOPMENT AUTHORITY

Layering is the key to successful winter dressing, especially when you're active.

"The latest is a liner called Aerozip III. It's breathable and superthin. Used to line polycotton, it has the same properties as Gore-tex."

They are also working with nylon fleece, a breathable pile which can be made up into jackets to be layered under a wind- and waterproof fabric shell.

And then there are all the derivatives of Mylar, aluminized layers which reflect the body's heat, on the principle of an emergency space blanket.

The MacPhee Workshop, with outlets in Edmonton, Calgary and Winnipeg, specializes in cold weather clothing, selling fabrics, furs and their own patterns and teaching courses. They started with Inuit parkas: hooded coats of wool duffle, lined and worn with a separate windproof, water-resistant shell. Although they now stock a Canadian version of Gore-tex and a number of synthetic fill and shell fabrics for skiwear, the core of their business is still parkas and other wool outerwear.

"People still want wool," says founder Linda MacPhee. "It's breathable, warm even when it's wet and it adjusts to your natural body warmth to keep you comfortable. Wool is a natural fibre, and no man-made fibre can ever really compete with it. It can be made up in light or heavy weights and it's always beautiful to look at."

GOVERNMENT OF ALBERTA

A class at the MacPhee Workshop learns the fine points of sewing with the new "miracle" insulated fabrics.

Despite the range of high-tech fabrics they order, MacPhee says she is not quick to jump on the bandwagon of every new product that becomes available. "I just don't believe in miracles, I guess."

MacPhee's testimony for wool echoes a turn-of-the-century Dr. Jaeger, the leading light of a health movement that advocated the wearing of wool next to the skin all year round.

Curator Anne Lambert of the University of Alberta's historic clothing collection says she has collected oral histories from a number of people who were children at the height of this movement. If their parents could afford only the cheaper (and itchier) grades of long woolens from the catalogue, life was a misery. Despite the complaints, believers persisted, Lambert says, because they were, rightly, very afraid of children getting sick. Child mortality rates were high, especially in the country, where medical help was often scarce.

UNIVERSITY OF ALBERTA ARCHIVES

In Alberta's early days, ladies' hats had more to do with fashion than frostbite and children were dressed in snug but sometimes scratchy woollens.

Wool was the basic component of cold weather gear for Alberta's pioneers. In fact, Lambert says, there wasn't much change in what Europeans wore from the late 1800s to the 1920s. There were, however, ethnic differences. The Ukrainian immigrants, coming from a similar climate, were sensibly dressed in sheepskin coats, worn with the pile inward. The British-born immigrants were scornful, "but the British were well known for not adapting. In the North, there were many cases of British officers freezing their feet in officers' boots rather than wear native dress."

Generally speaking, the layered look was in. "Because they didn't have the super-duper shortcuts (in fabrics) they just had to put on more and more clothing.

"The biggest difference (between our clothing and theirs) was weight. Their warmest coats were made of buffalo hide or very heavy wool. You really get a sense, working with these collections, of just how heavy their clothes were."

Fashion, of course, is always the wild card in any discussion of functional clothing. For an illustration, you have only to drive by a bus stop at 40-below to see teenagers shivering in bomber jackets and tight jeans, or women wearing dress coats designed for Toronto weather, thin stockings and unlined leather boots.

At the turn of the century, women had the worst of it. There are no photographic records of the garb of choice for 40-below — the cameras of the day wouldn't work when it was that cold, and anyway, who wanted to stand and pose under those conditions? Standard winter clothes for ladies seemed to run to heavy woolen skirts and jackets and, says Lambert, "Footwear was definitely a problem for fashionable ladies."

In fact, she says, a lot of women reported with relief that it was still acceptable for women to wear moccasins or mukluks in Edmonton, while in Toronto or Montreal they would have to have worn their fashionable but thin leather boots all year round.

The editor of Environment Views, *Maryhelen Vicars, is a freelance writer and editor based in Edmonton.*

Sharon Adams

Step by Step

Small-scale solutions to winter problems

EDMONTON ECONOMIC DEVELOPMENT AUTHORITY

William Rogers remembers the very moment he conceived of the livable winter city.

He'd attended a March discussion about planting flowers to brighten up Minneapolis and walked to the carpark. "I thought: flowers won't grow here six months of the year. We should just learn to live better in winter."

Borrowing from 35 years of experience in international relations, the political science professor visited winter cities for ideas. In 1978 he organized the first North American conference to study the problem, and subsequently co-wrote *The Winter City Book.*

He suggests that snowbirds should stop migrating and hibernating from frost to thaw and learn instead to **live** with winter.

Environment Views has asked several experts for their suggestions to help individuals and small communities cope with winter. We begin with **William Rogers.**

Socialize more. "It's important to get out, but you need someplace to go. Try the Ma and Pa grocery store, or a neighborhood pub — anywhere you can meet people for casual conversation."

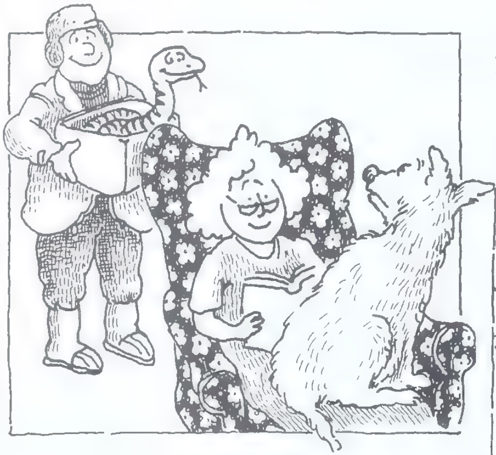
Patronize the arts. "In Naples you can sit in a cafe and watch the natural theatre of life for the price of a glass of wine. But in the north, you have to make a point of going to the theatre or a museum or a gallery."

Color your world. "Don't paint your houses and garages white. Do wear colorful clothing." Inside, buy bright furniture or use bright slipcovers in winter.

Keep sidewalks cleared. "Older people don't go out because they're afraid of breaking a hip. But a winding path through the snow would benefit everyone."

Make winter festive. "Start Christmas early and keep the decorations up late. Don't take Christmas lights down until spring."

Light your life. "Two diseases of winter cities are alcoholism and depression, partly due to the lack of sun." He recommends Christmas lights on exterior trees and fluorescent lights inside. Another idea is to put lights on a timer so you don't get up or come home to a darkened house. Tanning parlors can help, too.



Keep a pet. "Dogs and cats are great for the winter. They're warm and active. And they keep you moving, too."

Edmonton architect **Arni Fullerton** advises: "Don't go to Hawaii or anyplace warm. It makes subsequent winters seem longer."

Fullerton, chairman of the International Winter Cities Committee, should know — he once succumbed to the lure of Granada and "it took six years to get it out of my system."

He advocates learning "to use winter, not to hide from it. All it takes is a shift in attitude."

Be active. Walk, skate, ski, snowshoe or snowmobile. "Get outside at least once a day," he advises. "Don't succumb to cabin fever."

Dress warmly. A warm coat, hat, scarf and good mitts are musts. Boots should be warm, waterproof and have non-slip soles. "We have to quit dressing like Italians." For color and fun, dress in brightly colored layers. "It's easy, fun and cheap. You don't have to buy different outfits for fall, winter and spring."

Think traction. Buy a front-wheel or four-wheel-drive car. "They're incredibly safe, fun to drive, and no more expensive than other cars."

Try public transport. Avoid treacherous driving and parking hassles by taking the bus or light rail transit.

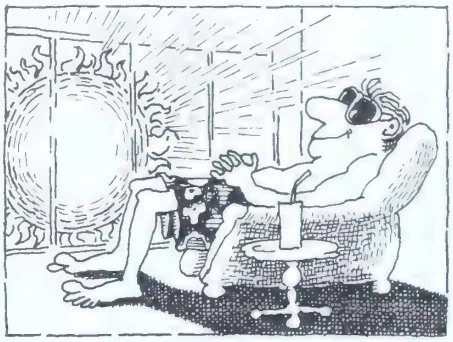
Grow vegetables indoors. "I grow cucumbers and tomatoes in the kitchen." (Dr. Rogers grows lettuce and basil under fluorescent lights in his basement).

Work flex time. "There's nothing more depressing than going to work and coming home in the dark."

EDMONTON ECONOMIC DEVELOPMENT AUTHORITY

A retired journalist and founder of the Livable Winter Cities Association, **Jack Royle** began his career in the Depression at the Winnipeg Tribune, in the city "with the country's lowest windchill factor."

"Seventy per cent of the world's population never see snow. Canadians don't appreciate this, but people elsewhere are envious of our winter weather." He advises:



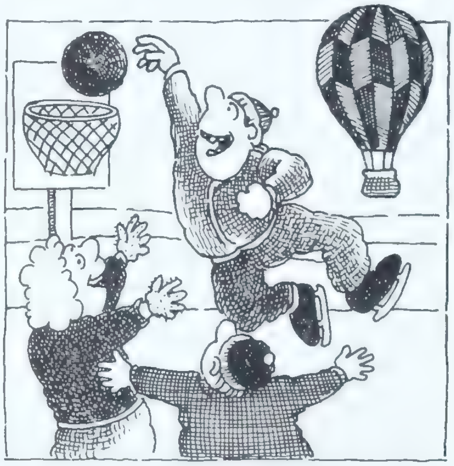
Enlarge southern windows. "Go for lots of glass on the south side of the house. Winter sun is precious."

Build a greenhouse. "You can grow plants, enjoy the sun, and with a heat pump, help warm the rest of the house."

Make an ice sculpture. "If everybody did it, we could make Canada a winter wonderland. At night, you can shine colored lights on them, or on ice fountains or waterfalls."

Sheila Pepper, a City of Ottawa recreation planner and national president of the Livable Winter City Association, believes Canadians should go one step further and actually **celebrate** the season.

"People hardly ever get out and play in the winter and they end up fighting the blahs and blues." Winter festivals, carnivals and games help put a warm glow into even the coldest community, she says.



Plan a winter festival. "Everybody can get involved. It gets them looking forward to winter." Events could include races on skates, skis, snowshoes, dogsleds or snowmobiles; ice fishing derbies; hockey, broomball, outdoor winter golf, football, baseball or badminton tournaments; snow and ice sculpture competitions; hot air ballooning; winter camping, caving and orienteering.

Build an outdoor playground. It could have a maze or obstacle course to be negotiated on skates; space for building forts and igloos; ice and snow sculptures; and surfaces for playing games.

Build an indoor park. This is a psychological boost, especially for the elderly, handicapped or very young who find it impossible to negotiate heavy snow drifts. It should have plenty of plants, lots of seating, and playground features like sandboxes and swings.

Hugh Knowles, an Edmonton horticulturist and landscape architect, advises planning ahead for winter cheer:

Select outdoor plants for winter color. Trees and bushes with bright bark, like Siberian coral dogwood and amur cherry, and colorful winter berries (sea buckthorn and mountain ash) look cheery and attract wildlife.

Use decorative garden screens. "They define a space, provide background to dramatize a plant, and help plants survive winter," preventing early snowmelt and protecting trunks and stems from sunburn until foliage grows.

Create a microclimate. Installing underground electrical cables which slightly warm root systems, can extend fall, hurry spring, and allow culturing of exotic plants, like holly trees or winter-flowering witch hazel, that usually do well only in warmer climes.

Harold Hanen is a Calgary architect and consultant, and proposed Calgary's Plus 15 elevated pedestrian walkway system. He would like brighter, more colorful, winters.

Design and build with color. "Warm tones and textured materials break up the harsher winter light." Paint houses "deep reds and greens — our native winter colors which work well against the brilliant blue of our winter sky."

Add a fireplace. "It can bring tradition and focus to winter family events."

Break up winter light. "The sun angle is very low and light is harsh in winter. Overhangs and screens on the southwest side of the house can soften the light and make the house seem warmer."

Sharon Adams, a Calgary freelance writer, is a journalism instructor at SAIT.

Making Downtown Livable

Houghton, Michigan and Calgary, Alberta are half a continent apart and vastly different in size and topography. Yet they have a common problem: Old Man Winter.

Houghton is a valley town, straddling a road with a 17 per cent grade. In winter it gets more than 200 inches (five metres) of snow.

When a mall opened nearby eight years ago, Houghton downtown merchants began getting the cold shoulder from shoppers. In the first year, sales dropped 40 per cent.

"We had two problems — maintaining the downtown and competing with malls," says Raymond Kespner, Houghton city manager. The solution was to create a walkway right through the centre of the shops, bringing shoppers inside.

"We met with business people and building owners and told them the city would pay to build interior doorways to connect shops." In return, shops and businesses promised to keep the walkway open during business hours.

"For $100,000 we were able to connect the first 14 buildings, one whole block." That first year, participating merchants regained lost business, so the system was expanded. Today, the interior walkway runs through six of Houghton's eight downtown blocks. "We've experienced a 10 per cent increase in business in five years," says Kespner. "The city's $1 million investment was recouped over four years. The system has probably generated $10 million in extra business — we've even had two motels locate downtown."

Downtown revitalization is an added benefit — nearly 2,000 residents, mostly senior citizens and university students, have moved into popular second-storey suites. "The seniors like the activity around them, and it gives the students an added feeling of maturity," Kespner notes.

"To have a good downtown, you need everybody there," agrees Harold Hanen, the architect who conceived of Calgary's extensive Plus 15 elevated pedestrian walkways in 1968.

Hanen's challenge was narrow downtown streets and a population in love with the automobile.

"Doing anything to improve transportation on the ground level seemed unrealistic," Hanen says. Densely packed buildings made a separate pedestrian system feasible.

Today, Calgary's Plus 15 system, open 24 hours a day, stretches over 8.5 kilometres. It boasts 40 pedestrian bridges and dozens of public atria.

And it didn't cost the city a cent to build. "The bridges and internal walkways were paid for by private enterprise," says Hanen. "It's made the downtown much more attractive. It's safer for pedestrians and has certainly made it much more comfortable and convenient."

Like Houghton, Calgary is enjoying an unexpected side benefit: The Plus 15 system has become a social, as well as a shopping, centre.

— Sharon Adams

Cathie Bartlett

The Winter Environment

The environmental impact of what we do in winter

Human activities have an impact on the environment throughout the year. In winter, some of these effects are exaggerated and some new problems are created.

There has been tremendous growth in winter recreation over the past decade or so. That's good news for sports equipment dealers and good for our physical and mental health, but it may not be so good for the environment.

Snowmobiles and off-highway vehicles compact the soil, destroy dormant vegetation and have an effect on animals.

This can be seen at the Cataract snowmobiling area in the southern part of Kananaskis Country. The snowmobiling activity there has an impact on the environment because of low snowfall and because it is a sensitive alpine area, says Dianne Pachal, executive director of the Alberta Wilderness Association (AWA). The compacted snow shortens the already short growing season, and the machines also damage ground cover.

The effect on wildlife is one of harassment — not in the sense of snowmobilers chasing animals — "but the noise and the activity is upsetting to them."

Snowmobiles sometimes cause stress just by being in the animals' territory, Pachal says.

"Winter is a high-stress period to start with, because of the food supply being short."

But snowmobiling used to occur throughout Kananaskis Country, says Don Cockerton, recreation planner for the area. Now the activity is confined to three areas, and these areas were selected where the activity would have the least environmental impact, on wildlife in particular.

As well, there are fewer elk, moose, deer and other animals at Cataract than in the higher valleys, Cockerton says.

The trail-widening work done there last fall, which brought protests from the AWA and other groups about negative effects such as erosion and siltation of a local stream, was "a relatively minor amount of work to upgrade and improve existing trails," he says.

TRAVEL ALBERTA

Snowmobile activity has an impact that is felt year round, especially in areas of low snowfall or sensitive vegetation.

The work was done to provide re-routes to avoid springs or seeps, which cause dangerous ice flows. It was also done where the trails were too narrow for existing maintenance equipment, and to eliminate ruts, which require more snow to give a useable surface.

It was also done with the usual referrals to Alberta Fish and Wildlife, and done carefully to minimize damage and erosion, Cockerton says. The area looked rough and disturbed when the environmentalist and naturalist groups visited the area, and a lot of this “was no doubt because we hadn’t finished the clean-up.”

But Pachal objects to the presence of snowmobiles in Kananaskis, period.

“You can go build snowmobile areas anywhere there’s enough snow,” she says.

“But if you’re looking for a wilderness experience, you have to have a wilderness area.”

Cross-country skiing and snowshoeing are relatively low-impact forms of recreation, with litter and campfires being the only concern. But downhill skiing has an enormous and concentrated impact. The question to many people is — should such a high-impact form of recreation be restricted in parks or wilderness areas? The proposed expansion at Sunshine Village Ski and Summer Resort at Banff shows just how sharply the lines are drawn.

Sunshine Village Corporation and Parks Canada are now reviewing the long-range plan for Sunshine, approved back in 1978.

Sunshine president Ralph Scurfield wants to expand parking at Sunshine beyond the resort’s boundary, install a higher-speed and more advanced lift than was approved in 1978, and to build another 210 rooms onto the 85-room hotel at the village.

> *“If Sunshine is allowed to expand, can Lake Louise be far behind?”*

An environmental impact study commissioned by Sunshine is in the works.

Economic and technological changes since the earlier plan was approved brought about the proposed expansion, Scurfield says.

Mike McIvor, a director of the AWA and the Bow Valley Naturalists’ Association, is adamant the proposed expansion should not go ahead.

The matter is being treated as “just a few more people on a hill,” but one should consider precedent, among other things, McIvor says.

“If Sunshine is allowed to expand, can Lake Louise be far behind?”

Recreation in national parks is supposed to be directly related to actual resources in the park, and depend as little as possible on facilities, he says.

“Downhill skiing is one of the sports most dependent on facilities,” says McIvor, adding he is not against downhill skiing, but there are places other than national parks where it can be done.

There undoubtedly will be public discussion regarding any proposed expansion to Sunshine, says Don Sears, acting assistant superintendent and chief of visitor services at Banff National Park.

As for downhill skiing in national parks, Sears says: “The ski areas are here. “They are not going to go away. They have legitimate leases — it’s not as if they sneaked in here in the middle of the night and built Sunshine when we weren’t looking.”

A long-range plan for land use in Banff is now nearing completion, says Bruce Leeson, special advisor in natural history for the research division of Parks Canada’s western region.

EDMONTON ECONOMIC DEVELOPMENT AUTHORITY

The ski areas can stay, but there will be no more, and the government is going to legislate their boundaries, Leeson says. The developers “can optimize their area, subject to protection of the environment.”

Winter can pose particular problems in the treatment of drinking water and the treatment of sewage. In the winter, there are fewer contaminants in drinking water because there is no run-off and because of ice cover, says Dan Smith, civil engineering professor at the U of A.

“As a result, you have relatively clean, very cold water, which still needs to be treated,” says Smith, who helped produce the Cold Climate Utilities Manual.

“Once you get below five to 10 degrees, the length of contact time to chlorinate should be increased as a matter of policy.”

This is because pathogens survive better in cold water and because all unit treatment processes operate a bit more slowly in winter.

In Edmonton, the city is putting in reservoirs downstream from the water treatment plant, to increase the water’s exposure time to chlorine.

Sewage treatment is affected by winter. Sewage is produced year-round and has to be treated, but winter can make it harder.

“Most (sewage treatment) processes deal with chemical or biological reactions,” Smith says. “The colder the water, the slower the rate.”

The “main crux” in designing treatment units is allowing for the influences of higher viscosity and slower reaction rates.

“Once you get past that, you have to watch for mechanical problems,” he says.

There are operational problems specific to winter, says David Spink, head of the Municipal Engineering Branch, Standards and Approvals Division of Alberta Environment. Valves freeze and lines break, and repairs are difficult.

While general operation and maintenance are geared to summer, winter is a strong factor in design.

“I think here it’s a way of life . . . For instance, we put sewers in eight feet deep so they don’t freeze.”

And sewage treatment is especially important in the winter.

Dissolved oxygen, present in natural waters, is essential to the survival of fish and any other aerobic organisms in the river. In winter, the natural ice cover means there is no natural oxygenation from air mixing with water at the surface.

Releasing oxygen-demanding waste into the river then, when no oxygen is being put back in, puts the waterlife in jeopardy, Spink says.

A number of dams around the province provide more dilution water "at the critical time of winter," says Scott McClure of Municipal Engineering in Alberta Environment's Pollution Control Division.

Edmonton's sewage treatment is good enough that it does not endanger the waterlife in the area, Spink and McClure say. The minimum objective for Alberta is five milligrams oxygen per litre, and McClure says he "doesn't recall it dropping below eight or nine parts (around Edmonton), which is really good."

All this dirty snow from city streets has to go somewhere. Snow dumps are ugly but not a major pollution source.

WINTER CITIES SHOWCASE

Care has to be taken when discharging waste water in winter that the waste is entering a moving stream, Spink says. Alberta Environment does not allow discharge into completely frozen streams or into dry drainage courses because this can create ice dams, which in turn lead to springtime flooding caused by the melting snows upstream coming upon the slower-melting icy areas.

At Edmonton's Gold Bar Sewage Treatment Plant, the winter season doesn't demand much adjustment because the waste water coming in never goes below 11 or 12 degrees, because of the high volume of hot water used in the city, and because the plant itself was designed for winter, says Sam Banerjee, director of operations.

If the sewage water temperatures were lower — as they often are in smaller centers — some of the equipment might freeze, says Banerjee.

Edmonton and Calgary have secondary treatment facilities with continuous discharge plants. Sewage treatment lagoons serve much of the rest of Alberta.

"We basically tell communities what they have to have," Spink says of Alberta Environment's regulations governing sewage treatment lagoons.

Municipalities over 800 population require a full lagoon system of four anaerobic cells plus two retention ponds. Those with a population of less than 800 have systems eliminating the anaerobic cells, with one of the two retention ponds being shallower to speed up reaction time.

Spink calls the full lagoon system "absolutely the Cadillac of sewage lagoon treatment systems anywhere in the world."

But the treatment process depends on the action of bacteria and algae.

This slows right down with winter's lower temperatures, meaning not as much treatment happens in winter.

With lagoon systems, "you basically have to store your effluent over the winter and treat it in the summer," says Spink.

When people think of water pollution in the winter, they often think of those huge, piles of dirt-encrusted snow. But are snow dumps really an environmental problem?

"It's an esthetic problem," says Scott McClure of Municipal Engineering in Alberta Environment's Pollution Control Division. "Snow dumps are so ugly."

Alberta Environment has done studies "that show snow dumps are not really a problem, because the material that goes into the river through the dump would go into the river through the storm sewer system," says Akio Masuda, head of Alberta Environment's Water Quality Branch.

Similarly, snow dumps placed on or near the river "have no appreciable effect on the chain," Masuda says.

McClure tells of one snow dump in Edmonton, in the middle of the North Saskatchewan River. There were complaints galore about it.

"We asked the city to move it, and the calls dropped right off."

Neither Edmonton nor Calgary dump any snow on the river now. The City of Edmonton tries to place its dumps, as much as possible, in industrial areas or on the outskirts of the city, hidden behind berms or fences.

"We try not to call them dumps — we call them snow disposal areas," says Hank Gongos, street maintenance supervisor of the roadways operations section for the city's transportation department.

Air pollution problems are often most acute and noticeable in the winter because of atmospheric inversions. In the winter the air close to the earth's surface is often colder than the air a few hundred metres above the surface. This is called an inversion and it interferes with the normal mixing of pollutants in the air. Dispersion of air pollutants in the atmosphere is a result of air turbulence caused by temperature differences.

"This happens because all the things we produce, such as heat from cars, tend to be warmer than air, and it rises," says Bruce Thomson, an air quality specialist with the atmospheric environmental service of Environment Canada.

Thomson says "an inversion is like a lid on a pot, and all that stuff in there isn't going anywhere."

So the same amount of pollution is being produced — it's just that it's not being carried away, but is being held down by the band of warmer air which traps the warm, moist air produced by daily living.

It's also more noticeable because it forms fog. Fog occurs when air cools off and walter droplets form.

This is likely to happen during an inversion because cold temperatures are associated with inversions. The inversion puts a lid on all the warm moist air with the result that water droplets condense, trapping or dissolving many air pollutants. While this occurs naturally, we help out by adding moisture and adding to pollution, which adds to fog and low cloud formation."

Cathie Bartlett is an Edmonton freelance writer.

BOOK REVIEW *by David Spalding*

Mammals of the Canadian Wild.

Adrian Forsyth. Camden House Publishing Ltd. 1985. 351p. $29.95.

The Wonder of Canadian Birds.

Candace Savage. Western Producer Prairie Books. 1985. 211p. $35.00.

Eagles of North America.

Candace Savage. Western Producer Prairie Books. 1987. 127p. $24.95.

Attractive books on Canadian wildlife are increasingly visible in Alberta bookshops, and make good Christmas gifts for anyone with an interest in the outdoors. The three books reviewed here are fine representatives of the current crop. Any one of them might make a much appreciated gift — if the right choice is made for the right person.

Forsyth's **Mammals of the Canadian Wild** is for the serious reader. It covers all the wild mammals found in Canada from the tiny long-tailed shrew which has only been recorded ten times in the country, to the 392,000 lb blue whale — whatever happened to ton(ne)s? The one species missed is *Homo sapiens;* now that Desmond Morris has accustomed us to thinking of ourselves as in some ways just another species, it is perhaps time to start including a comparative treatment of the most dangerous animal in the world in all systematic books of mammals. The mammals are arranged in the reverse of the usual order, with the most primitive at the end, an approach which conveniently presents the reader with the familiar large species first. A short essay introduces each order and family, and the bulk of the text is made up of accounts of individual species. Each of these is headed by a small distribution map; as only national boundaries are shown within North America the maps are confusing, and some are very misleading. A standard summary of factual data presents basic information about each species, with non-metric dimensions only. Then the animal is more discursively discussed in an essay varying in length from a paragraph to several pages. The language of the book is sometimes awkward, and usually fairly technical, so that the seven-page glossary will be necessary for most readers. However, the book is far from dull. There is much unfamiliar information, and one can learn here about caribou concentrating radioactive fallout, the unusual sex life of wolves and the complex interrelations of squirrels and trees. A strong evolutionary and behavioral emphasis clarifies each animals' place in the natural world. Perhaps the best part of the book is found in the many short discussions of related topics which complement the species accounts; thus the killer whale text is followed by a discussion of co-operative hunting; the spotted bat by an explanation of rabies. Although a few species are illustrated by paintings, almost every page has a colored photograph. These are always adequate, and some are splendid; unfortunately the tight design of the book does not always give the best pictures the space they deserve. Buy this one for the outdoors type with a real interest in nature.

The Wonder of Canadian Birds is much easier to read, and even more attractively illustrated. It is intended for the beginner, and more than fulfils its promise with a lucid text which is entertaining as well as accurate. Technical terms are kept to a minimum, and explained when they are introduced. Anthropomorphism — the discussion of birds as if they were people — is kept to a minimum, and always presented as analogy rather than fact. The book sensibly does not attempt to be comprehensive, but describes representative birds in detail, leaving their many relatives to more comprehensive (and usually much duller) works. Although no selection of species would satisfy everyone, one could wish that more than 12 songbirds had been included, as these birds are most usually seen by many people. The omission of birds particularly associated with Canada, such as the Gray (Canada) Jay is particularly regrettable. The distribution maps are no bigger than those in Forsyth's **Mammals,** but because they show state and province boundaries they are much more useful. Popular books are often disregarded by experts, but despite a few errors and infelicities, this book will be useful at most levels. There is much new information which will be unfamiliar to readers who do not have time to read the ornithological journals, an impressive group of advisors has reviewed the text, and the 24-page bibliography attests to thorough research and is a useful resource on its own. The photographs are often full page, are all good, and some — the preening killdeer, the pelicans taking wing, the alighting nighthawk — deserve a rave review. Give this to anyone with a lake cottage or a camper, or who watches nature programs on TV.

Eagles of North America, by the same author, is primarily a picture book. Almost 100 pages of full-page photographs give a wonderful visual impression of our two eagle species; eating, feeding, nesting, and lazing. Splendid shots show a young eagle crash landing, and adults about to pounce on prey, squabbling, sinking their bills into fish guts, or sitting decoratively beside a garbage dump. The book is introduced by a ten-page essay, with (despite leaping between species in a sometimes confusing way),

continued on page 28

By Gail Helgason

Sludge in Bow angers Environmentalists

BANFF — The appearance this fall of sludge and solid waste material in the Bow River, downstream from Banff National Park, was "inexcusable", says park superintendent Dave Day.

Residents of Exshaw and Canmore reported seeing solid waste in the river, about 70 kilometres downstream from the park. They also complained of odors and of garbage in the water.

Day confirmed that the solids emanated from Banff, but said the problem with solid waste material has since been rectified.

The sludge and organic material resulted from the inability of the park's existing 16-year-old sewage treatment plant to cope with high peak loads this summer, he explained.

A new $10-million plant is in the final stages of design and is scheduled to be in use by the spring or summer of 1989. The new plant will handle peak flows up to the year 2000.

In the meantime, a new chlorinating system has been added to improve the existing plant, as well as a series of floating aerators. Environment Canada, Parks has also cleaned up accumulated sludge and added new screens to remove solids.

"Between all these systems we have eliminated the problem of offensive solids entering the river. We are putting into the river an effluent which is sanitary."

Akio Masuda, head of the Water Quality Control Branch with Alberta Environment, said the provincial department has taken recent water samples of the Bow and has not been able "to find anything that would lead us to believe that the water is polluted."

However, Day said the amount of organic material held in suspension in the Bow "is still too high", and ways have not been found to reduce this level with the existing plant.

"We have, I think, taken all the steps we can with the current plant . . . There's nothing more we can do, but if someone has a bright idea, we're willing to listen."

Dave Mahood, a Calgary fisheries biologist who formerly worked with the Canadian Wildlife Service, expressed concern that chlorine can be extremely toxic to fish.

But in the short term, "that may be what they have to do, to kill off the disease organisms."

Day noted that Environment Canada, Parks is co-operating with the Environmental Protection Service and Alberta Fish and Wildlife to study the impact of water quality on fish.

He added that the situation could have been prevented if funds had been available earlier for plant construction.

"Had we had the money, we probably would have replaced the plant earlier. Obviously, someone didn't think through the situation..."

The incident, however, has angered environmentalists who look to the federal park system to set examples for responsible environmental practices.

"If there's anywhere in the world where water should be clean, it's in Canada's first national park," says Mike McIvor of Banff, a director of the Alberta Wilderness Association.

He called the situation in the Bow "a symptom of a much larger problem.

"Development has been out of control, especially in Banff townsite, for quite some time now. Environment Canada has known of the situation for a substantial period."

He said the federal government should have put a hold on further development to stem further pollution.

Oil Company Leaves Nature Sanctuary Alone

Friends of the Canadian Nature Federation's Clifford E. Lee Nature Sanctuary have scored a small but significant victory with the decision of Home Oil to abandon possible drilling in the area.

"Home Oil has abandoned the project," said Jim Wurzer of Calgary, the firm's environmental co-ordinator. "We don't want to make more problems than we already have."

More than 120 species of birds have been sighted at the sanctuary, about 25 kilometres west of Edmonton. The area is also home to a diverse wildlife population.

Home Oil originally looked at the area last fall and received approval for seismic testing. The sanctuary's management committee, however, protested the company's plans, even though seismic testing is not "considered destructive," said Wurzer.

He said the company abandoned the project to show that "we are not unreasonable" and that the company shared the federation's concerns for preserving wildlife.

Joy Finlay, a board member of the federation, applauded the company's decision.

"It was certainly a frightening idea for all concerned, and it came quite unexpectedly."

Despite the happy resolution, she said the incident is a sobering reminder that obtaining property rights alone does not always guarantee the protection of wildlife resources in any given area.

Help on the way for endangered native plants

Hopes are high that the newly-formed Alberta Native Plant Council will help to focus public awareness on the plight of endangered native plant species in the province.

"There is no legal protection now for many native plants," says Cliff Wallis, a Calgary environmental consultant and author of a recent report on endangered plant species in southwestern Alberta.

"We know there are a lot of people interested in native plants. Books about native plants sell in the tens of thousands."

Four endangered plants — the blue flag iris, the mountain ladyslipper, the yellow paintbrush and the wild onion — were identified in Wallis' report, entitled Pilot Rare Plant Monitoring Program in the Oldman Regional Plan Area in Southwestern Alberta.

The report recommends that recovery and monitoring plans be prepared for the first three species. A bulletin on the management and monitoring of the threatened lady's slipper is scheduled to be released this winter.

The project was funded by the Natural Areas Program of the Alberta Forest Service, and the World Wildlife Fund's Wild West Project.

Wallis said some of these native plants grow only in localized areas along the Continental Divide and Milk River areas of southern Alberta.

The mountain lady slipper is "quite a showy species, so picking is a problem."

Some of these plants are also found at the edge of more mature forests, and are therefore threatened by logging.

Wallis notes that interest in native plant conservation is "sort of a new direction for Forestry. It's good to see them supporting that kind of activity."

Many other endangered native plants exist throughout Alberta. Some endangered species, such as the yellow yucca, are showy and relatively easy to garner public support for. Others, such as microscopic wolffia which occurs in lakes near Edmonton, are less appealing — but equally important in preserving Alberta's biological diversity.

Wolffia "looks like green scum," says Wallis.

The council's challenge will be to gain support for a wide-ranging number of endangered specis. Wallis notes that Alberta has one of the most diverse ecosystems in Canada, and that the province is young enough in terms of development to save many endangered native plants.

Peter Lee, manager of the Natural Areas Program administered by Alberta Forestry, Lands and Wildlife, says "significant progress" has recently been made in native plant conservation.

He cites the formation of the council and the recognition of the Big Sagebrush area, in the South Castle region south of the Crowsnest corridor. This area, under 10 square kilometres, contains a number of nationally endangered native plant species, including the big sagebrush.

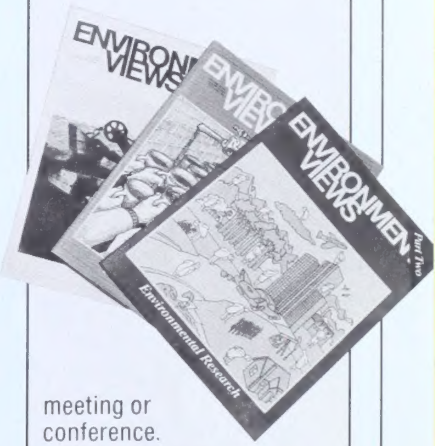
Big Sagebrush is being considered as a potential candidate for Natural Area designation. This represents the first time an area has been considered for such protection solely on the basis of its plant resources, says Lee.

He adds that because both the government and private individuals are moving in the direction of native plant conservation, "we know things are really starting to happen."

(Anyone interested in more information about the Alberta Native Plant Council may call Lorna Allen at 427-5209.)

YOU CAN HELP

You can help us meet our target of doubling our mailing list by the end of the year. If you belong to an organization whose members would be interested in Environment Views, contact us, and we will send sample copies for your next meeting or conference.



We're trying to develop a list of locations for free distribution of the magazine to people who would be interested in environmental issues (libraries, municipal buildings, reading rooms, etc.). If you have a suggestion, contact Maria at Alberta Environment Communications, 12th Floor, Oxbridge Place, 9820 - 106 St., Edmonton T5K 2T6 (427-6267).

As always, subscriptions are free. Send in the subscription card if you're not a subscriber and you would like to receive Environment Views, or pass it along to a friend who would be interested.

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Book Review

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leaves us wanting more. This is a most attractive book, but a fuller and more structured text might have given us a definitive popular book on the North American eagles. This is the newest of the three books, and so is the safest gift for the book addicts on your list. You are safe to give this to anyone who is at all interested in natural history, and even to some who think they are not.

All three of the books cover a lot of ground well, make accessible a lot of valuable information, and are among the best yet on their subjects. They could be improved in future editions by a stronger feeling for regional detail, for Canada (let alone North America) presents a great diversity of nature experiences. Even better would be the spark of the occasional first-hand anecdote; the recorded personal experience, that shows the writer knows the species in the wild as well as its literature. Two previous books on eagles by Brown and Olendorff both have this quality, and it makes a difference to the reader's confidence.

These three suggestions may make your Christmas gift lists easier to deal with. And of course, when the January blues come along, you can always acquire your choice as the present you really wanted for yourself, but nobody gave you.

ENVIRONMENT UPDATE

Winter Cycling

Winter weather doesn't have to mean packing away your bike until spring.

Tooker Gomberg of the Edmonton Bicycle Commuters Society has just returned from a conference in Holland on Planning for the Urban Cyclist. In some European cities 50 per cent of cyclists are year-round commuters. The Edmonton Bicycle Commuters Society is pushing the city to do more for cyclists including widening and clearing the curb lane.

The group will be having workshops on winter cycling that will cover equipment, maintenance, clothing, visibility, safety and traction. Their bike repair facility is open throughout the winter at 9158 Jasper Ave. For information about bicycle commuting call 426-0148.

Garbage into Gold

It costs about the same amount of money to recycle garbage as to use and maintain landfills. Still, says the Environment Council of Alberta's panel on recycling, Albertans continue to turn their gold into garbage, preferring the convenience of dumping, despite the increasing costs of subsidizing a massive landfill system. If you would like to read the latest on this topic, the ECA's *Recycling in Alberta* is now available. The report is the result of a series of public hearings held throughout the province last spring. Copies of both a Summary Report and a Technical Report are available from the ECA free on request, by calling 427-5792, a government RITE number or by dialing Zenith 06075 for a toll-free call.

Task Force

Industry and government have reached an important accord in the *Report of the National Task Force on Environment and Economy*, released in Quebec in September. The task force included seven environment ministers as well as a number of leaders from industry. Among the proposals was a call for broader environmental education at all levels, and for conservation strategies to be in place in all provinces by 1992. Copies of the task force report are available free from the Environment Council of Alberta, 427-5792 or toll-free at Zenith 06075.

Look It Up in the Book

The Alberta Environmental Directory is an extremely useful guide to environmental resources of all kinds in the province. A project of the Alberta Environmental Network, the directory was compiled and published by the Pembina Institute for Appropriate Development. Copies ($10 for individuals and non-profit organizations; $25 for government organizations or corporations) are available from the Environmental Resource Centre in Edmonton, 10511 Saskatchewan Dr. (433-8711) or by writing to the Pembina Institute for Appropriate Development, PO Box 839, Drayton Valley, T0E 0M0.

If you have a short news item of province-wide interest you'd like to contribute to Environment Update, please send it to the editor at the address on the Contents page. The editor reserves the right to select and edit the items.